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<120> ANTI-CD38 HUMAN ANTIBODIES AND USES THEREFOR

<130> 00361-8035.US00

<140> US 10/588,568

<141> 2006-08-04

<150> 60/541,911

<151> 2004-02-06

<150> 60/547,584

<151> 2004-02-26

<150> 60/553,943

<151> 2004-03-18

<150> 60/599,014

<151> 2004-08-06

<150> 60/614,471

<151> 2004-10-01

<160> 43

<170> Patentin Ver. 3.3

<210> 1

<211> 363

<212> DNA

<213> Homo sapiens

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cctggccagg gtctcgatgt gatggctat atccatccga atcgtggcaa tacgaattac 180
ggccagaatgt ttccaggccg ggtgaccatg acccggtata cccagcttag caccgcgtat 240
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<210> 2

<211> 366

<212> DNA

<213> Homo sapiens

<400> 2

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cctgggaagg gtctcgatgt ggtgacat atccgttctg atggtagctg gaccttattat 180
ggcgatagcg taaaaggccg ttttaccatt tcacgtata attcgaaaaa caccctgtat 240
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<210> 3

<211> 366

<212> DNA

<213> Homo sapiens

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	cctggggagg	gtctccgatg	ggtgagcaat	atctatcttg	atggtagcaa	tacccctttat	180
	gccgtatcg	tggaaaggcg	tttttaccatt	tcacgtgtata	attccaaaaaa	caccctgtat	240
	ctggcaatgg	acacccgtcg	ttcgccaaatg	acggccgtgt	attatggcgc	gggtaaatgt	300
	tatggttggc	cttttcattt	tttttttgat	tatggggcc	aaggcacctt	ggtgacggtt	360
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<210> 4
<211> 357
<212> DNA
<213> *Homo sapiens*

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	ctggatatacg	ttaaaggccgc	tatccggat	ttatccggat	ttatccggatcg	ccaccttttttt	240
	ctggcaatgt	atccgtccgtc	ttccggatgt	ttatccggatcg	ttatccggatcg	ggcttttttttt	300
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<210> 5
<211> 121
<212> PRT
<213> *Homo sapiens*

<400> 5
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1 5 10 15

Ser Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Tyr Ile Asp Pro Asn Arg Gly Asn Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Ala-Ser-Gly-Arg-Val-Thr-Met-Thr-Ala-Ala-Thr-Ser-His-Ser-Thr-Ala-Tyr

Met-Glu-Lys-Ser-Ser-Lys-Arg-Ser-Glu-Arg-Thr-Ala-Met-Tyr-Tyr-Glu-

85 90 95

Ala Arg Glu Tyr Thr Tyr Thr Thr His Gly Met Leu Asp Phe Ile pGly
100 105 110

GLN GLY III Leu Val III Val Ser Ser
115 120

<210> 6
<211> 122
<212> PRT
<213> *Homo sapiens*

<400> 6
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
20 25 30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Asn Ile Arg Ser Asp Gly Ser Trp Thr Tyr Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Arg Tyr Trp Ser Lys Ser His Ala Ser Val Thr Asp Tyr Trp
100 105 110
Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 7
<211> 122
<212> PRT
<213> Homo sapiens

<400> 7
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1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Asn Ile Tyr Ser Asp Gly Ser Asn Thr Phe Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asn Met Tyr Arg Trp Pro Phe His Tyr Phe Phe Asp Tyr Trp
100 105 110
Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 8
<211> 119
<212> PRT
<213> Homo sapiens

<400> 8
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Asn

20	25	30
Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val		
35	40	45

Ser Asn Ile Ser Tyr Leu Ser Ser Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Phe Tyr Gly Tyr Phe Asn Tyr Ala Asp Val Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 9
<211> 342
<212> DNA
<213> *Homo sapiens*

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<400> 9
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tacccatcaa aaccatgtca aaggccggcag ctataaaattt atcttgggtc taatcggtcc 180
atgtgggtcc cggatctttt ctggggctct gtatccggcga cggatttttac ctgttggatcc 240
atcggttgcgg aactgttggaa ctggggctgtt tattatggcc agcagttttc ttctaaatgttcc 300
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<210> 10
<211> 327
<212> DNA
<213> *Homo sapiens*

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<400> 10
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atttactgcg gaggcgagcc ggtatatttc gtttttcgtg atttgttacca gcaagaaacc 120
cggttaatcg cggaaactttt aattttatagat tttttcaattt gttttttttt cttttttttt 180
ggatattttttt cggatattttt atttttttttt tttttttttt cttttttttt cttttttttt 240
ggatattttttt cggatattttt atttttttttt tttttttttt cttttttttt cttttttttt 300
ggatccaaatgg ttgtttttttt atttttttttt tttttttttt cttttttttt cttttttttt 360

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<210> 11
<211> 324
<212> DNA
<213> *Homo sapiens*

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<400> 11
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tcgttgtacg gcgataatata ttgttaataag tatgtttctt gtatccggca gaaaccgggg 120
caggccggat ttggatccggat ttatccggat aataatgcgtt ttatccggat cttccggggcc 180
tttgcgtatc ttggatccggat ttatccggat aataatgcgtt ttatccggat cttccggggcc 240
gacgacggcc attatattatg ctctttttat gattttttt gatttttttt ttggccggcc 300
accaatgtta ccgtttttttt ccgg 324

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<210> 12

<211> 327
<212> DNA
<213> Homo sapiens

<400> 12
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tcgtgtacgc gcgataaatat tggtcattat tatgcttctt ggttaccagca gaaacccggg 120
caggcccgat ttcttgcgtat ttatcgat aatgatcgat cctcaggcat cccggaaacgc 180
tttagcggat ccaacacggg caaacccggc accctgacca tttagcggcac tcaggcgaa 240
gacgaacggg attattatgg ccaatgttcat gattatcttc atgatttgtt gtttggcgcc 300
ggcacaaatg taaccgttct tggccag 327

<210> 13
<211> 114
<212> PRT
<213> Homo sapiens

<400> 13
Asp Ile Val Met Thr Gin Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
1 5 10 15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gin Ser Leu Leu Phe Ile
20 25 30

Asp Gly Asn Asn Tyr Leu Asn Trp Tyr Leu Gin Lys Pro Gly Gin Ser
35 40 45

Pro Gin Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Gin Gin Tyr
85 90 95

Ser Ser Lys Ser Ala Thr Phe Gly Gin Gly Thr Lys Val Glu Ile Lys
100 105 110

Arg Thr

<210> 14
<211> 109
<212> PRT
<213> Homo sapiens

<400> 14
Asp Ile Gin Met Thr Gin Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gin Asp Ile Ser Ala Phe
20 25 30

Leu Asn Trp Tyr Gin Gin Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Lys Val Ser Asn Leu Gin Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gin Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Tyr Ser Gly Ser Ile
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr
100 105

<210> 15
<211> 108
<212> PRT
<213> Homo sapiens

<400> 15
Asp Ile Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Gln
1 5 10 15

Thr Ala Arg Ile Ser Cys Ser Gly Asp Asn Ile Gly Asn Lys Tyr Val
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Val Val Ile Tyr
35 40 45

Gly Asp Asn Asn Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Asp Ser Ser Tyr Phe Val
85 90 95

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln
100 105

<210> 16
<211> 109
<212> PRT
<213> Homo sapiens

<400> 16
Asp Ile Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Gln
1 5 10 15

Thr Ala Arg Ile Ser Cys Ser Gly Asp Asn Ile Gly His Tyr Tyr Ala
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Arg Asp Asn Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Tyr Leu His Asp Phe
85 90 95

Val Phe Gly Gly Thr Lys Leu Thr Val Leu Gly Gln
100 105

<210> 17
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus sequence

<400> 17
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30
Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Trp Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60
Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Tyr Trp Gly Gln
100 105 110
Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 18
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus sequence

<400> 18
Gln Val Gln Leu Val Glu Ser Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Tyr Trp Gly Gln

100

105

110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 19
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus sequence

<400> 19
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Gln
1 5 10 15

Thr Ala Arg Ile Ser Cys Ser Gly Asp Ala Leu Gly Asp Lys Tyr Ala
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Gln His Tyr Thr Thr Pro Pro Val
85 90 95

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105

<210> 20
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus sequence

<400> 20
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Tyr
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln His Tyr Thr Thr Pro Pro

85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 21
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus sequence

<400> 21
Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
1 5 10 15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
20 25 30

Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln Gln His
85 90 95

Tyr Thr Thr Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

Arg

<210> 22
<211> 300
<212> PRT
<213> Homo sapiens

<400> 22
Met Ala Asn Cys Glu Phe Ser Pro Val Ser Gly Asp Lys Pro Cys Cys
1 5 10 15

Arg Leu Ser Arg Arg Ala Gln Leu Cys Leu Gly Val Ser Ile Leu Val
20 25 30

Leu Ile Leu Val Val Val Leu Ala Val Val Val Pro Arg Trp Arg Gln
35 40 45

Gln Trp Ser Gly Pro Gly Thr Thr Lys Arg Phe Pro Glu Thr Val Leu
50 55 60

Ala Arg Cys Val Lys Tyr Thr Glu Ile His Pro Glu Met Arg His Val
65 70 75 80

Asp Cys Gln Ser Val Trp Asp Ala Phe Lys Gly Ala Phe Ile Ser Lys
85 90 95

His Pro Cys Asn Ile Thr Glu Glu Asp Tyr Gln Pro Leu Met Lys Leu
 100 105 110
 Gly Thr Gln Thr Val Pro Cys Asn Lys Ile Leu Leu Trp Ser Arg Ile
 115 120 125
 Lys Asp Leu Ala His Gln Phe Thr Gln Val Gln Arg Asp Met Phe Thr
 130 135 140
 Leu Glu Asp Thr Leu Leu Gly Tyr Leu Ala Asp Asp Leu Thr Trp Cys
 145 150 155 160
 Gly Glu Phe Asn Thr Ser Lys Ile Asn Tyr Gln Ser Cys Pro Asp Trp
 165 170 175
 Arg Lys Asp Cys Ser Asn Asn Pro Val Ser Val Phe Trp Lys Thr Val
 180 185 190
 Ser Arg Arg Phe Ala Glu Ala Ala Cys Asp Val Val His Val Met Leu
 195 200 205
 Asn Gly Ser Arg Ser Lys Ile Phe Asp Lys Asn Ser Thr Phe Gly Ser
 210 215 220
 Val Glu Val His Asn Leu Gln Pro Glu Lys Val Gln Thr Leu Glu Ala
 225 230 235 240
 Trp Val Ile His Gly Gly Arg Glu Asp Ser Arg Asp Leu Cys Gln Asp
 245 250 255
 Pro Thr Ile Lys Glu Leu Glu Ser Ile Ile Ser Lys Arg Asn Ile Gln
 260 265 270
 Phe Ser Cys Lys Asn Ile Tyr Arg Pro Asp Lys Phe Leu Gln Cys Val
 275 280 285
 Lys Asn Pro Glu Asp Ser Ser Cys Thr Ser Glu Ile
 290 295 300

 <210> 23
 <211> 1317
 <212> DNA
 <213> Homo sapiens

 <400> 23
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 attggggaaaa ttatccatcggaa tagcgtatcg ataaactata ccacatctctt aaaggataaaa 180
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<210> 24
<211> 642
<212> DNA
<213> Homo sapiens

<400> 24
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<210> 25
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 25
atggcaact gcgagttcag c 21

<210> 26
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 26
tcagatctca gatgtcaag atgaatc 27

<210> 27
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 27
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<220>
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<400> 32
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gccacc atg aaa cac ctg tgg ttc ttc ctc ctg ctg gtg gca gct ccc 348
Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro
1 5 10
aga tgg gtc ctg tcc cag gtg gaa ttc tgc agg cgg tta gct cag 393
Arg Trp Val Leu Ser Gln Val Glu Phe Cys Arg Arg Leu Ala Gln
15 20 25
cctccaccaa gggtccatcg gtctccccc tggcaccctc ctccaagagc acctctgggg 453
gcacagcgcc cctgggctgc ctggtaagg actactccc cgaaccgggt acggtgctgt 513
ggaactcagg cgcctgtacc acggcggtgc acaccttccc ggctgtccctc cagtcctcag 573
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gcacgtaccg ggtggtcagc gtcctaccg tctgcacca ggactggctg aatggcaagg 993
agtacaagtg caaggctcc aacaaagccc tcccgcccc catcgagaaa accatctcca 1053
aagccaaagg cgacccccga gaaccacagg tgcacccct gccccatcc cgggatgagc 1113
tgaccaagaa ccaggctcgc ctgaccctgc tggtaaagg ctctatccc agcgcacatcg 1173
ccgtggagggt ggagagcaat gggcagccgg agaacaacta caagaccacg cctcccggtc 1233
tggactccga cggctcttc ttctctaca gcaagctcac cgtggacaag agcagggtgc 1293
agcaggggaa cgtcttcata tgctccgtga tgcacgggc tctgcaccaac cactacacgc 1353
agaagggcct ctccctgtct cgggttaaat gagggccgt ttaaaccgc tgatcagcct 1413
cgactgtgcc ttcttagttgc cagccatctg ttgtttggcc ctcccccggt cttccctga 1473
ccctggaaagg tgccactccc actgtcc 1500

<210> 33
<211> 800
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide construct

<220>
<221> CDS
<222> (307)..(705)

<400> 33
tcgcttattac catggtgatg cggtttggc agtacatcaa tggcgtgga tagcggttt 60
actcacgggg atttccaagt ctccacccca ttgacgtcaa tggagttt tttggcacc 120
aaaatcaacg ggactttcca aaatgtcgta acaactccgc cccattgacg caaatggcg 180
gttaggcgtgt acgggtggag gtctatataa gcagagctct ctggcttaact agagaaccca 240
ctgcttactg gcttatcgaa attaatacga ctcactatag ggagacccaa gctggctagc 300
gccacc atg gtg ttg cag acc cag gtc ttc att tct ctg ttg ctc tgg 348
Met Val Leu Gln Thr Gln Val Phe Ile Ser Leu Leu Leu Trp
1 5 10
atc tct ggt gcc tac ggg gat atc gtg atg att aaa cgt acg gtg gct 396
Ile Ser Gly Ala Tyr Gly Asp Ile Val Met Ile Lys Arg Thr Val Ala
15 20 25 30
gca cca tct gtc ttc atc ttc ccc cca tct gat gag cag ttg aaa tct 444
Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
35 40 45
gga act gcc tct gtt gtg tgc ctg ctg aat aac ttc tat ccc aga gag 492
Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu
50 55 60
gcc aaa gta cag tgg aag gtg gat aac gcc ctc caa tgc ggt aac tcc 540
Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser
65 70 75
cag gag agt gtc aca gag cag gac agc aag gac agc acc tac agc ctc 588
Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu
80 85 90
agc agc acc ctg acg ctg agc aaa gca gac tac gag aaa cac aaa gtc 636
Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
95 100 105 110
tac gcc tgc gaa gtc acc cat cag ggc ctg agc tgc ccc gtc aca aag 684
Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys
115 120 125
agc ttc aac agg gga gag tgc tagggcccg tttaaacccg ctgatcagcc 735
Ser Phe Asn Arg Gly Glu Cys
130
tcgactgtgc cttctagttt ccagccatct gttgtttgcc cctcccccgt gccttccttg 795
acccct 800

<210> 34
<211> 800
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide construct

<220>
<221> CDS
<222> (307)..(384)

<220>
<221> CDS
<222> (386)..(712)

<400> 34
tcgctattac catggtgatg cggtttggc agtacatcaa tggcggtga tagcggtttg 60
actcacgggg atttccaagt ctccacccca ttgacgtcaa tggaggtttg ttttggcacc 120
aaaatcaacg ggactttcca aaatgtcgta acaactccgc cccattgacg caaatggcg 180
gtaggcgtgt acggtgggag gtctatataa gcagagctct ctggctact agagaaccca 240
ctgcttactg gcttatcgaa attaatacga ctcactatag ggagacccaa gctggctagc 300
gccacc atg gcc tgg gct ctg ctc acc ctc ctc act cag ggc 348
Met Ala Trp Ala Leu Leu Leu Leu Thr Leu Thr Gln Gly
1 5 10

aca gga tcc tgg gct gat atc gtg atg cac gaa gtt a acc gtc cta ggt 397
Thr Gly Ser Trp Ala Asp Ile Val Met His Glu Val Thr Val Leu Gly
15 20 25 30

cag ccc aag gct gcc ccc tcg gtc act ctg ttc ccg ccc tcc tct gag 445
Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu
35 40 45

gag ctt caa gcc aac aag gcc aca ctg gtg tgt ctc ata agt gac ttc 493
Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe
50 55 60

tac ccg gga gcc gtg aca gtg gcc tgg aag gga gat agc agc ccc gtc 541
Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Gly Asp Ser Ser Pro Val
65 70 75

aag gcg gga gtg gag acc acc aca ccc tcc aaa caa agc aac aac aag 589
Lys Ala Gly Val Glu Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys
80 85 90

tac gcg gcc agc agc tat ctg agc ctg acg cct gag cag tgg aag tcc 637
Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser
95 100 105 110

cac aga agc tac agc tgc cag gtc acg cat gaa ggg agc acc gtg gag 685
His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu
115 120 125

aag aca gtg gcc cct aca gaa tgt tca tagggcccg tttaaacccg 732
Lys Thr Val Ala Pro Thr Glu Cys Ser

130

135

ctgatcagcc tcgactgtgc cttctagttg ccagccatct gttgtttgcc cctcccccgt 792
 gccttcct 800

<210> 35
 <211> 359
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein construct

<400> 35
 Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp
 1 5 10 15
 Val Leu Ser Gin Val Glu Phe Cys Arg Arg Leu Ala Gln Ala Ser Thr
 20 25 30
 Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser
 35 40 45
 Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
 50 55 60
 Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
 65 70 75 80
 Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
 85 90 95
 Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys
 100 105 110
 Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu
 115 120 125
 Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro
 130 135 140
 Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
 145 150 155 160
 Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
 165 170 175
 Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp
 180 185 190
 Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr
 195 200 205
 Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
 210 215 220
 Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu
 225 230 235 240

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
245 250 255
Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys
260 265 270
Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
275 280 285
Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
290 295 300
Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
305 310 315 320
Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
325 330 335
Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
340 345 350
Leu Ser Leu Ser Pro Gly Lys
355

<210> 36
<211> 133
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
protein construct

<400> 36
Met Val Leu Gln Thr Gln Val Phe Ile Ser Leu Leu Leu Trp Ile Ser
1 5 10 15
Gly Ala Tyr Gly Asp Ile Val Met Ile Lys Arg Thr Val Ala Ala Pro
20 25 30
Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr
35 40 45
Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys
50 55 60
Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
65 70 75 80
Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser
85 90 95
Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
100 105 110
Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
115 120 125
Asn Arg Gly Glu Cys
130

<210> 37
<211> 135
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
protein construct

<400> 37
Met Ala Trp Ala Leu Leu Leu Leu Thr Leu Leu Thr Gln Gly Thr Gly
1 5 10 15
Ser Trp Ala Asp Ile Val Met His Glu Val Thr Val Leu Gly Gln Pro
20 25 30
Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu Leu
35 40 45
Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr Pro
50 55 60
Gly Ala Val Thr Val Ala Trp Lys Gly Asp Ser Ser Pro Val Lys Ala
65 70 75 80
Gly Val Glu Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala
85 90 95
Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His Arg
100 105 110
Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys Thr
115 120 125
Val Ala Pro Thr Glu Cys Ser
130 135

<210> 38
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 38
Val Ser Arg Arg Phe Ala Glu Ala Ala Cys Asp Val Val His Val
1 5 10 15

<210> 39
<211> 15
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 39

Phe Leu Gln Cys Val 5 Lys Asn Pro Glu Asp Ser Ser Cys Thr Ser
1 5 10 15

<210> 40

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 40

Cys Gln Ser Val 5 Trp Asp Ala Phe Lys Gly Ala Phe Ile
1 5 10

<210> 41

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 41

Thr Trp Cys Gly 5 Glu Phe Asn Thr Ser Lys Ile Asn Tyr
1 5 10

<210> 42

<211> 120

<212> PRT

<213> Homo sapiens

<400> 42

Glu Val Gln Leu Val 5 Glu Ser Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Tyr Trp Gly Gln

100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 43
<211> 113
<212> PRT
<213> Homo sapiens

<400> 43
Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
1 5 10 15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
20 25 30

Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Gln Leu Leu Ile Tyr Leu Gln Ser Asn Arg Ala Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gln Val Tyr Tyr Cys Gln Gln His
85 90 95

Tyr Thr Thr Pro Pro Thr Phe Gly Gln Gln Thr Lys Leu Glu Ile Lys
100 105 110

Arg